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THE ASSESSMENT OF POLLUTION DAMAGE TO AQUATIC RESOURCES: ALTERNATIVES TO THE TRIAL MODEL

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INTRODUCTION

Thirty years ago, Aldo Leopold remarked in *The Land Ethic* that "[o]ne basic weakness in a conservation system based wholly on economic motives is that most members of the land community have no economic value."[1] Mr. Leopold's generalization is probably equally applicable to aquatic resources. It is fair to say that for the most part, no economic value has been fixed for the resources which comprise the aquatic community. The primary reason for this apparent shortcoming is that it is no easy thing to place a price tag on the environment.

In the last several years, attention has properly focused on the so-called superfund legislation that has led a "perils of Pauline" existence on Capitol Hill for some time,[2] recently in the form of Senate bill 2083.[3] However, it must be understood

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1. A. LEOPOLD, *The Land Ethic*, in A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE 210 (1949).

2. S. 684, 96th Cong., 1st Sess., 125 CONG. REC. S2882 (daily ed. March 15, 1979); S. 2900, 95th Cong., 2d Sess., 124 CONG. REC. S5397 (daily ed. Apr. 12, 1978); S. 687, 95th Cong., 1st Sess., 123 CONG. REC. S2484 (daily ed. Feb. 10, 1977); S. 1187, 95th Cong., 1st Sess., 123 CONG. REC. S5134 (daily ed. March 30, 1977); S. 2083, 95th Cong., 1st Sess. (1977); H.R. 6803, 95th Cong., 1st Sess., 123 CONG. REC. H3904 (daily ed. May 2, 1977); S. 1754, 94th Cong., 1st Sess., 121 CONG. REC. S8278 (daily ed. May 15, 1975); S. 2162, 94th Cong., 1st Sess., 121 CONG. REC. S13262 (daily ed. July 22, 1975).

The Carter administration was responsible for the introduction of S. 1187, and has taken other steps to control oil pollution. *See* Oil Pollution of the Oceans: President's Message to Congress Recommending Measures to Control the Problem, 13 WEEKLY COMP. OF PRES. DOC. 408 (March 18, 1977).

3. S. 2083, 95th Cong., 1st Sess. (1977) (as amended).

that the economic concern identified by Mr. Leopold will not be cured by the "superfund" unless that fund is administered in a manner that recognizes and addresses the valuation problem. In short, no amount of compensation funding in the public till under current law can guarantee that those dollars will flow to those who are in fact injured by water pollution.[4]

Society still insists that liability be predicated on causation, if not always on fault. It is questionable whether it is possible to ensure that compensation funds flow to the proper recipient under the present trial model. One obstacle to the flow of such funds arises from the litigative difficulty of proving damages in pollution cases. Our legal tradition requires, in general, that damages be gauged in dollars and cents, although this may not be a meaningful criterion in each case. The basic question remains whether a dollar value can be assigned to particular kinds of environmental injury.[5] This valuation process must be conducted in a way that is not arbitrary, that is procedurally fair, that provides reasonable nationwide uniformity, that is sensitive to the subtleties of sophisticated biology and economics, and that reduces the costs and uncertainty of environmental litigation.

A related shortcoming in the legal framework of natural resource damage assessment is the lack of scientific baseline data from which to measure environmental change. This shortcoming may be cured to the extent that natural resource damage assessment can be performed in advance of a spill incident. Whether pre-spill assessment can be performed turns on practical and political questions such as funding, agency responsibility, and applicable legislation. Senate bill 2083, which passed the Senate at the end of the 95th Congress, represented

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4. *See generally* Swan, *Approaches to Oil Pollution Responsibility*, 50 ORE. L. REV. 503 (1971); Bergman, *No Fault Liability for Oil Pollution Damage*, 5 J. MAR. L. & COM. 1 (1973); Doud, *Compensation for Oil Pollution Damage: Further Comment on the Civil Liability & Compensation Fund Conventions*, 4 J. MAR. L. & COM. 525 (1973); Wood, *Toward Compatible International and Domestic Regimes of Civil Liability for Oil Pollution of Navigable Waters*, V ENVT'L L. REP. (ENVT'L LAW INST.) 50116 (1975); Wood, *Requiring Polluters to Pay for Aquatic Natural Resources Destroyed by Oil Pollution*, 8 NAT. RESOURCES LAW 545 (1976); Comment, *Comprehensive Oil Pollution Liability and Compensation Act: How Super is the "Superfund"?*, 1978 DET. C. L. REV. 277; Comment, *Assessment of Civil Monetary Penalties for Water Pollution: A Proposal for Shifting the Burden of Proof Regarding Damages*, 30 Hastings L.J. 651 (1979); Comment, *Compensation for Oil Pollution at Sea: An Insurance Approach*, 12 SAN DIEGO L. REV. 717 (1975).

5. *See* 7 NAT'L ADVISORY COMM. ON OCEANS AND ATMOSPHERE, REPORT TO THE PRESIDENT AND THE CONGRESS app. VIII, at 19-20 (June, 1978).

a first and rather rough attempt to answer these questions. The implication of the bill is that as much biological research as possible should be performed before pollution incidents occur. Both the Clean Water Act of 1977[6] and the Outer Continental Shelf Lands Act Amendments of 1978[7] call for the recovery of the costs of clean-up and restoration or replacement of damaged resources and illustrate the need for basic research on the consequences of expanding industrial use of the marine environment.[8]

To be sure, the information to be established as baseline data cannot be gathered completely before a spill has occurred, but much preliminary work can be done. In order for such data to be of maximum utility the results should then be subjected to examination and review in a forum that will have the attention of the public, that will presumably be adequately funded, and that will be free of the need to function under the emergency conditions that typically arise after the spill occurs.

Some of the practical aspects of implementing alternative programs to accomplish natural resource valuation and damage assessment will be discussed in this article. The article first examines the existing body of law regarding the matter of damage assessment, and then explores the probable consequences of implementing a natural resource assessment scheme that would be based on established natural resource damage assessment procedures and valuation tables. It then considers whether a valuation scheme established by rule-making can be

6. 33 U.S.C.A. § 1321 (West 1978).

7. Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, 92 Stat. 629.

8. Section 208 of the 1978 Amendments to the Outer Continental Shelf Lands Act provide for the development of baseline environmental studies for both existing and prospective lease sale areas. *Id.* § 208 (to be codified at 43 U.S.C. § 1346). In addition, § 208 directs the Secretary of the Interior to monitor the marine environment and provide time series and data trend information to be used "for the purpose of identifying any significant changes in the quality and productivity of such environments, for establishing trends in the areas studied and monitored, and for designing experiments to identify the causes of such changes." *Id.* § 208 (to be codified at 43 U.S.C. § 1346(b)). Furthermore, the Secretary is granted specific a ıthority to cancel at any time any lease or permit where continued operation "will probably cause serious harm or damage to life (including fish and other aquatic life), to property . . . or to the marine coastal, or human environment. . . . " *Id.* § 204 (to be codified at 43 U.S.C. § 1334(a)(2)(A)(i)). However, for the Secretary to exercise this power two additional tests must be met. These are that "[the] threat of harm or damage will not disappear or decrease to an acceptable extent within a reasonable period of time; and the advantages of cancellation outweigh the advantages of continuing such lease or permit in force." *Id.* § 204 (to be codified at 43 U.S.C. § 1334(a)(2)(A)(ii)-(iii)).

a more desirable means of assessing resource values than the current case-by-case method. It is concluded that regardless of the particular path finally chosen, the matter requires much closer sustained attention than it has received in the past.

DEVELOPMENT OF NEUTRAL PRINCIPLES IN AQUATIC RESOURCE VALUATION

Common Law Judicial Valuation

Assuming that natural resources have an economic value, the problem to be confronted is the determination of that value. A novel and troublesome case that fixed damages for the loss of natural resources was decided in 1978 in Puerto Rico. *Commonwealth of Puerto Rico v. SS Zoe Colocotroni*[9] involved a discharge of 1.5 million gallons of oil off the coast of Puerto Rico in 1973, resulting in damage to a mangrove swamp on the island. The decision sets a remarkable and controversial precedent with respect to the valuation and assessment of natural resource damages.

In *The Zoe Colocotroni,* Puerto Rico, as trustee for its resources, submitted a biological damage survey as evidence to be used in calculating recovery. This survey multiplied a representative number of dead organisms per square meter of biosystem by a dollar amount equal to the cost of replacement. The court granted relief on several counts, including over $75,000 in cleanup costs, and more than half a million dollars for pollution damage to twenty-three acres of mangrove swamp. The latter figure included replanting, monitoring, and fertilizing expenses. However, the largest recovery was awarded for damage to the marine organisms in an area of about twenty acres in and around the swamp. The court accepted evidence that

> *there was a decline of approximately 4,605,486 organisms per acre as a direct result of the oil spill.* This means that 92,109,720 marine animals were killed by the COLOCOTRONI oil. *The uncontradicted evidence establishes that there is a ready market with reference to biological supply laboratories,* thus allowing a reliable calculation of the cost of replacing these organisms. The lowest possible replacement cost figure is $.06 per animal, with many species selling from $1.00 to $4.50 per individual. *Accepting the lowest replacement cost, and attaching damages to the lost*

9. 456 F. Supp. 1327 (D.P.R. 1978), *aff'd,* No. 78-1542 (1st Cir. June 29, 1979).

> *marine animals in the West Mangrove area, we find the damages caused by Defendants to amount to $5,526,583.20.* [Emphasis added.][10]

What is to be made of such a judgment? Does inclusion of every microorganism, no matter how small its contribution to the overall ecosystem, seem appropriate when we consider the six cent price tag? Alternatively, if the district court had before it a full, rigorous scientific and economic record on these matters, should the damage assessment process be rerun in the event there is another oil spill? If a generic question has been addressed in the case, is there not a measure of unfairness to other parties whose monetary liability may be affected, but who have not had a hand in the procedures used, the record made, or the result reached?

A central shortcoming of the present institutional framework for compensating parties adversely affected by oil and hazardous materials spills is the litigative burden of showing the monetary damage caused by such injury. Each claimant must prove individual damages — a task that is costly, time consuming, and inherently uncertain. Even for the public claimant with plentiful technical and legal assistance, such as the federal or state governments, this shortcoming may present serious problems;[11] even less tolerable are the problems that confront the smaller public claimant or the private claimant.

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10. *Id.* at 1344-45 (footnote omitted).

11. This is exactly the problem that now confronts the federal or state plaintiff under the Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, 92 Stat. 629. Title III of the 1978 Amendments establishes an Offshore Oil Spill Pollution Fund which recognizes as one element of the damage claim "injury to, or destruction of, natural resources. . . ." *Id.* § 303(a)(2)(C) (to be codified at 43 U.S.C. § 1813(a)(2)(C)). However, the Coast Guard has stated that for such a public plaintiff to be successful in asserting its claim as a "trustee" of natural resources, it must establish:

> (1) The identification and quantity of the natural resource for which compensation is claimed;
> (2) The nature and extent of the injury to the natural resource;
> (3) The cost to restore or replace the natural resource; and
> (4) Any economic loss relating to the natural resource which would not be recovered by replacement or restoration.

44 Fed. Reg. 16,874 (1979) (to be codified at 33 C.F.R. § 136.115(a)).

To establish such a claim on a case-by-case basis is a substantial burden on plaintiffs even with the benefit of monies provided by the fund for conducting damage assessment activities under § 302(c)(2) of the 1978 Amendments. Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, § 302(c)(2), 92 Stat. 629 (to be codified at 33 U.S.C. § 1812). Uniform damage assessment procedures and valuation methods would ease this burden.

Defendants in spill cases also have an obvious interest in the matter, in both keeping recoveries at realistic levels and in providing limits in order to obtain insurance protection at reasonable cost.

There are alternatives to the adjudication of organism values as exemplified by *The Zoe Colocotroni.* Under proper procedural safeguards, such alternatives could serve to alleviate some of the hardship that a complex and lengthy case-by-case determination of resource values is likely to entail.[12] A pre-established table of values is one option to be considered for use in conjunction with pre-established research protocols and economic methodologies for conducting the valuation phase of the resource damage assessment investigation. Such a natural resource valuation process and a damage assessment scheme were elements of the legislation that passed the Senate in 1978.[13]

The issue then, is whether there is a way to streamline this process by developing "neutral principles" for conducting a post-spill damage assessment and, if possible, for assigning a conventional dollar value to environmental injuries associated with a spill. But can such things be precisely valued? Fair non-judicial methods of valuation are possible and should be given serious consideration.[14]

Specific Conventional Values as Guidelines

Assuming that the judicial trial model of damage assessment is typified by *The Zoe Colocotroni,* it is suggested that there are other means available to conduct natural resource damage assessment that may be more attractive from the standpoints of improved predictability, economy of administration, and scientific rigor. One technique that has been considered is the development of specific conventional "dollar" values as guidelines to control the compensation of injured parties. If established in advance of a particular damage incident such values can improve the probability of fair and in-

12. *See* W. RODGERS, HANDBOOK ON ENVIRONMENTAL LAW 519 (1977). Professor Rodgers states that "[s]uccess in a law suit for oil spill damage is complicated by predictable barriers — finding a defendant and overcoming subtle causation and burden of proof problems." *Id.*

13. *See* 124 CONG. REC. S17,435-55 (daily ed. Oct. 6, 1978); *id.* H12,731-42 (daily ed. Oct. 12, 1978).

14. *See generally* Nat'l Advisory Comm'n on Oceans & Atmosphere, Workshop on Oil Spill Damage Assessment (July 17, 1978)(unpublished transcript).

formed settlements in lieu of litigation. Moreover, such values would have a more sound technical basis in as much as the research underlying the valuation would be performed under less hectic conditions than usually obtain in the wake of a major pollution incident. In practice, there is little information regarding either the application of conventional values to or the utility of fixed resource values for damage assessment litigation. However, a variety of analogous approaches, private, federal, and state, do exist where specific conventional values have been established for various legally recognized injuries and thus merit further exploration.

Private Approaches. There have been several attempts to assign economic dollar values to particular forms of wildlife.[15] For example, the Pollution Abatement Committee of the Southern Division of the American Fisheries Society (AFS) has published a pamphlet entitled *Monetary Values of Fish,* in which the 1975 revision opens with the claim that "[e]very fish has a value."[16]

The AFS listing may be faulted on the ground that it was apparently based only on a survey of average prices charged by commercial fish hatcheries. Although hatchery prices may be an imperfect guide to values, the fact that AFS has produced this guide suggests that society need not "reinvent the wheel" in each damage assessment situation. Fortunately, the AFS is presently undertaking further regional and nationwide efforts along the same lines.[17]

Nevertheless, numerous questions remain. How often must the values be revised to reflect the impact of inflation? Are per-fish or per-pound values useful without also taking into account the mortality of hatchery fish versus naturally propa-

15. *See generally* Comptroller Gen. of the United States, GAO Comptroller General's Report B-146335, Total Cost Resulting From Two Major Oil Spills (June, 1977). This report was prepared at the request of the late Rep. Leo J. Ryan, Chairman, House Government Operations Committee, in connection with hearings regarding the National Contingency Plan.

16. AM. FISHERIES SOC'Y, SO. DIV., POLL. ABATEMENT COMM., MONETARY VALUES OF FISH (1975).

17. In 1977, the Monetary Values of Fish Committee of the North Central division of the AFS approved a report entitled *1978 Reimbursement Values for Fish.* The committee relied chiefly on hatchery production costs, commercial values, and angler expenditures, but recommended consideration of a variety of other factors in addition to the "actual value of the fish themselves." AM. FISHERIES SOC'Y, NORTH CENTRAL DIV., MONETARY VALUES OF FISH COMM., 1978 REIMBURSEMENT VALUES FOR FISH (1977). A nationwide AFS committee is scheduled to begin work in 1979 on a single publication to cover all AFS regions.

gated fish? Additionally, the costs of transportation, stock assessment, and restocking must also be revised. Is it necessary to consider both hatchery prices and commercial fish prices, at least for food fish for which a market exists? How shall we treat special cases such as endangered species?

This AFS table has been cited in connection with the preparation of benefit-cost analyses under the National Environmental Policy Act of 1969,[18] and has been used at trial by the Virginia State Water Control Board,[19] even though it is not definitive and has no independent legal status. It should also be noted that the State of Florida has adopted by regulation a table of fish values comparable to the AFS table.[20]

Federal Approaches. Another approach is evident in the *Principles and Standards for Planning Water and Related Resources* promulgated by the Water Resources Council in 1973.[21] Under those guidelines, an effort is made to assign per-day value to recreational activities including recreational fishing. The guidelines divide outdoor recreation into two categories: the "general" category, which is said to include a value range of 75 cents to $2.25, and the "specialized" category, which is assigned a daily value range of $3.00 to $9.00. The difference between the two categories may be difficult to define, but one may be tempted to invoke, by analogy, Mr. Justice Stewart's celebrated dictum concerning obscenity[22]—namely, that, however, difficult it is to define a specialized form of recreation, one nonetheless knows it when one sees it.[23]

How useful are the Water Resources Council guidelines? Aside from inflation occurring since 1973, both categories of fishing—general and specialized—provide only a range of values, indeed a range where the ceiling is three times the mini-

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18. 42 U.S.C. § 4321 (1970); *see, e.g.*, 1 OFFICE OF NUCLEAR REACTOR REGULATION, U.S. NUCLEAR REGULATORY COMM'N, FINAL ENVIRONMENTAL STATEMENT RELATED TO OPERATION OF INDIAN POINT NUCLEAR GENERATING PLANT UNIT No. 3, at XI-63 (Feb., 1975).

19. *E.g.*, Commonwealth *ex. rel.* State Water Control Bd. v. Weaver Mirror Co., Law No. 4722 (Franklin County, Va., Cir. Ct., June 2, 1977).

20. *See* notes 16, 17 *supra.*

21. 38 Fed. Reg. 24,778 (1973).

22. Jacobellis v. Ohio, 378 U.S. 184, 197 (1964) (Stewart, J., concurring).

23. Along related lines, the National Oceanic and Atmospheric Administration (NOAA) has completed a study analyzing the economics of marine recreational fishing. NAT'L OCEANIC & ATMOSPHERIC ADMIN., U.S. DEP'T OF COMMERCE, ECONOMIC ACTIVITY ASSOCIATED WITH MARINE RECREATIONAL FISHING (NOAA S/T 78-129) (June, 1977). The stated purpose is to estimate the economic contribution that marine recreational fishing makes to the national economy.

mum. For a claimant or a putative defendant in a major pollution case a potential recovery range of 3:1 is rather broad, although even this kind of uncertainty would be an improvement over the present case-by-case basis of resource valuation and damage assessment.

Two additional observations concerning the Water Resources Council guidelines should be noted, one procedural and one substantive. First, the guidelines were developed through the rulemaking process provided under the Administrative Procedure Act (APA).[24] Thus, they were first issued in proposed form and subsequently followed by extensive study, review, field testing, public hearings, and the preparation of an environmental impact statement. The public participation in this type of rulemaking may provide a model for future generic actions with respect to resource damage assessment valuation problems.

The second observation is that even if a two-category breakdown may not do perfect justice to the variety of economic values at issue in marine pollution valuation efforts, the notion of a ceiling is an important concept. It is submitted that no system of compensation should recompense those whose outlays are patently unreasonable.[25]

Under an initiative announced by President Carter on June 6, 1978, the Water Resources Council Principles and Standards are to be revised. In particular, the President has directed the Council "to prepare a manual which ensures that benefits and costs are calculated using the best techniques and provides for consistent application of the Principles and Standards and other requirements."[26] Perhaps the Administration's initiative with respect to the Principles and Standards will produce further refinement in the area of natural resource valuation.

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24. 5 U.S.C. §§ 551-576 (1976).

25. The fact that fishermen spent nearly $65.00 per fish pursuing them in the sport fishery does not justify charging that amount in fishkill damage claim since the individual's right to enjoy the recreational and aesthetic aspects of fishing has not been abridged. . . . Although the average (Washington salmon or steelhead) fisherman is willing to spend $65.00 on goods and services and the recreational fringe benefits that go with catching one fish, he is not willing to pay that price for the fish alone. Neither should the violator be required to pay such an exorbitant fee per fish in a fishkill damage claim.

STATE OF WASH., DEP'T OF ECOLOGY, GUIDELINES FOR EVALUATING FISHKILL DAMAGES AND COMPUTING FISHKILL DAMAGE CLAIMS IN WASHINGTON STATE 19 (1972).

26. Presidential Message No. 182, 95th Cong., 2d Sess., 124 CONG. REC. S8679, S8680 (daily ed. June 7, 1978). 44 Fed. Reg. 30, 247 (1979).

The scientific community should be aware of developments such as these not only because they will have an impact on federal construction projects, but also because they may have an important, albeit indirect, effect on other aspects of government decision-making: for example, the issuance of licenses for various private projects that require federal or state approval. Of course, whether it is proper to apply the Principles and Standards in this broader field will be a function of the rigor of the data that go into their formulation, the existence of substantive authority that would make them legally applicable, and the sufficiency of the procedures used for their formulation.

State Approaches. Damage assessment schemes in Virginia, California, Washington, and Florida provide a range of approaches to the matter of natural resources valuation. Although, none of the state schemes is as extensive as the proposed national program, each of the state programs illustrates a potential element of the proposed national scheme.

Responsibility for natural resource damage assessment in Virginia regarding fish kills rests with the State Water Control Board. The Virginia Code empowers the Board to recover costs incurred by the state in investigating the cause of a fish kill incident, as well as replacement costs representing the value of the fish destroyed.[27] Although the term "replacement values" is not statutorily defined and no official table of values has been promulgated, the Virginia courts have accepted the AFS tables of fish values based on hatchery replacement costs as approximate values.[28]

The State of Washington also employs a system of valuation, but this system does not have the force of law. The Washington State Department of Ecology has published a document entitled *Guidelines for Evaluating Fishkill Damages and Computing Fishkill Damage Claims in Washington State.*[29] In general, the Washington guidelines establish the value of fish killed as either the hatchery price or the cost of hatchery rearing of the size and type of fish lost. However, the primary thrust of the Washington guidelines is not natural resource valuation *per se,* but rather to provide a methodology for assessing physical resource damage in the field. Moreover, the

27. VA. CODE § 62.1-44.15(11)(a) (1973).
28. *See* note 19 *supra.*
29. *See* note 25 *supra.*

emphasis is placed on documentation and presentation of evidence for subsequent litigation purposes.[30]

Although an established schedule of natural resource values is desirable, there are a number of problems associated with valuation systems based on hatchery replacement costs such as those used by Virginia and Washington. These problems include the lack of values for non-hatchery species (especially marine species); the lack of compensation for the disproportionate mortality, if this occurs, when hatchery fish are put into an unprotected environment; the special case of rare or endangered species; and dollar valuations that may not adequately reflect the market value of either sport or commercial fishing.[31]

California's experience regarding natural resource damage assessment has been extensive, due in large part to the 1969 Santa Barbara oil spill. The California scheme, like those of Virginia and Washington, is neither statutory nor regulatory but rests instead upon a provision of the California State Constitution. Article 4, section 2 of the California Constitution directs the state legislature to provide for the protection of fish and game.[32] The state legislature has delegated this responsibility to the California Fish and Game Commission. California, in contrast to Virginia and Washington, employs an aggressive, but essentially ad hoc valuation scheme based in part on differing values for resources in different geographical areas.[33] The state's valuation position is reflected in a categorization of resource damage and settlement positions, but ultimately relies on the inherent threat to litigate the issue of damages in the appropriate court of law.[34] California alleviates some of the artificiality associated with hatchery replacement costs by recognizing that resource values may differ according to location within a single jurisdiction.

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30. For an illustration of the use of the Washington guidelines, see Complaint for Resource Damage Recovery, State v. Manson Constr. & Eng'r Co., No. 19508 (Pacific County, Wash., Super. Ct., filed Aug. 8, 1978) (claiming (a) sport and commercial fishery losses, (b) restocking costs, and (c) repropagation costs (the values of the adults that would have matured and spawned, had the kill not occurred)).

31. *See generally* Macbeth, *Measure of Damages in Fishkill Cases*, Envir. Cont. Newsletter (Nat'l Ass'n of Att'ys Gen.), Nov. 8, 1974, at 14.

32. CAL. CONST. art. 4, § 2.

33. *See generally* Nat'l Advisory Comm'n on Oceans & Atmosphere, Workshop on Oil Spill Damage Assessment 98-111 (July 17, 1978) (remarks of Edwin Dubiel, Cal. Dep't of Justice).

34. *Id.*

Apparently only Florida has adopted a valuation system by regulation. By legislative mandate,[35] the State Department of Pollution Control has promulgated tables of fish values that are published in the Florida Administrative Code.[36] The methodology for establishing the resource valuation tables is not specifically provided for by statute, although it appears that the tables may have been based at least in part on the AFS model.[37] Of course, the Florida tables have a distinct advantage over the materials used by other states in that they have the force of law: in a judicial or administrative proceeding where natural resource damages are in issue, the Florida table enjoys a presumption of validity unless credible evidence to the contrary is introduced. Other states' valuation schemes must be established as valid evidence in each proceeding in which they are employed.

Even though adopted by regulation, the Florida resource values are only presumptively valid since the Florida Supreme Court has held that to make values conclusive would result in a denial of the right to present evidence, a violation of due process of law. The defendant's right in a spill case to present evidence was established in *Department of Pollution Control v. International Paper Company*,[38] where the statute permitting damages to be assessed by reference to a table of resource values for individual species of fish was challenged as a violation of constitutional protections. The Florida court held that establishing statutorily authorized fish values was a proper exercise of the police power and that the tables were relevant to the question of damages. The court also held that the manner of determining values may be statutorily established and presumed as fact unless credible evidence to the contrary is introduced by either party. The decision adopts this statutory construction so as to avoid the more difficult issue that would arise if the legislature's intent to make the presumption conclusive had been shown more clearly.

As a practical matter, adoption of a natural resource valuation table as a regulation may be expected to give rise to a

35. FLA. STAT. ANN. § 403.141(3) (West Supp. 1979).

36. FLA. ADMIN. CODE ch. 17-11.

37. *See* Letter from R.L. Caleen, Jr., General Counsel, Fla. Dep't of Environmental Regulation, to authors (June 23, 1978) (on file at Santa Clara Law Review). Significantly, it appears that the Florida authorities conducted an evidentiary (trial-type) rulemaking proceeding before the table of values regulation was promulgated. *Id.*

38. 329 So. 2d 5 (Fla. 1976).

rebuttable presumption as to the accuracy of the valuation scheme thus created.[39] That is, once it is established that damage has occurred and causation has been shown, a prima facie case exists and the dollar values of the damaged resources are presumed to be those set out in the valuation tables. Even with a clearly rebuttable presumption, however, important questions remain. Should the government be allowed in a particular case to exceed the value shown in the regulation? And if a party challenges the established value and presents some evidence for this purpose, does the presumption disappear? If the presumption disappears, would values need to be established "from scratch," and would both parties thus be restored to their original positions?

The existence of the various state schemes discussed above shows that the problem of resource valuation has been recognized and that attempts have been made to confront it. However, thus far, the state schemes appear to be less than ideal in providing reliable, fair, and inexpensive methods for determining the value of damaged natural resources.

It may be necessary in some cases to establish values based on criteria other than hatchery replacement costs. Moreover, it is essential that the evidentiary status of any such damage assessment and valuation guidelines be defined by statute. This would eliminate or at least reduce the burden of proving the value of the damaged resources in each proceeding, since conventional values would have been established in advance of the spill. Since priorities are such that the vast majority of states are not capable of preparing extensive damage assessment plans prior to the occurrence of a pollution incident, federal funding would probably have to be made available if such a program were to be pursued. The Oil Spill Compensation "superfund" legislation discussed below would provide funds to the states for the purpose of developing this type of natural resource damage assessment plan.

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39. Evidentiary devices such as this are already found in some federal and state environmental laws. Thus, section 404 of the 1978 amendments to the Outer Continental Shelf Lands Act apparently established a rebuttable presumption in favor of a person claiming under the Fishermen's Contingency Fund (Title IV). Section 404 states, in part, that where certain conditions are met, "there shall be a presumption that such claim is valid. . . . " Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, § 404, 92 Stat. 629 (to be codified at 43 U.S.C. § 1844). *See also* Alessi, Wright & Treiber, *Shifting the Burden of Proof in State Environmental Protection Acts: A Blessing to Environmental Plaintiffs*, 8 ENVT'L L. REV. 851 (1978).

ISSUES AND ALTERNATIVES IN DAMAGE ASSESSMENT RULEMAKING

Available Institutional Mechanisms

As stated above, two important goals are to move the damage assessment baseline forward in time and reduce the range of uncertainty. It is possible to identify several potential vehicles for achieving these objectives.

Strict Liability by Statute. A legislative body could pass a new statute that would determine natural resource damage in a more or less arbitrary way, along the lines of the Alaska dollar-per-gallon law.[40] This is a direct way to do things, but what it gains in certainty it may well lose in fairness. Fundamentally, it constitutes a legislative shrug, a throwing up of the hands and a basic lack of confidence in the ability of scientists and economists to describe the complex reality of the environment.

Another shortcoming of the legislative fiat approach is that it is rigid; once such legislation is passed, it may be difficult or impossible to obtain further legislation to correct, modify, or update a law. And significantly, legislative committee hearings are probably not, as a general rule, suited to the development of the kind of detailed factual record that an administrative agency can develop using skilled staff. The job is, if not classically one for delegation to an agency because it comes so close to the traditional judicial role of fixing damages, at least well suited to the procedural flexibility and technical expertise for which such agencies have been turned to in the past.

Strict Liability by Contract. A second method would be to impose damage assessment provisions by contract, for example, as a condition to a federal or state permit or lease. This has been done in several contexts.[41] Even so, the contract route for fixing damages in advance is not available in all cases and binds only the parties to the contract. Another shortcoming is the fact that such liability-without-fault provisions may be imposed in an unfair way given the uneven bargaining power of the parties, and may be no less arbitrary than the dollar-per-gallon approach noted previously.

While the contract option may provide a way to reach the party at fault, it does so in a manner that may be inflexible,

40. ALASKA STAT. § 46.03.758 (Supp. 1979).

41. *See* Fidell & Du Bey, *Proposals for Reform in the Assessment of Oil Spill Damages*, PROCEEDINGS OF THE AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES CONFERENCE ON THE ASSESSMENT OF ECOLOGICAL IMPACTS OF OIL SPILLS § III(A)(2)(b) (June, 1978).

scientifically unsupportable, and quite summary in practice. Alternatively, if it is necessary to sue to enforce such an agreement, query whether the court will apply the sanction provision in all cases or make its own assessment of the damages. If such a contractual provision is to be sustained, it must be shown to be not unreasonable. As one observer has put it,

> *[h]igh valuations which do not bear a reasonable relation to a method of valuation are likely to be treated as penalties rather than liquidated damages.* This approach may simply push the problem of valuation back to a different forum, but it may be effective in reducing the problem of presenting evidence in individual cases and justifying claims in settlement negotiations. [Emphasis added.][42]

Rulemaking. Assuming that a rulemaking approach is preferable to a more rigid statutory approach, the scope of the rulemaking program must be delineated. Here several general approaches are possible. First, the proceeding could conclude by issuing a regulation that provided a conventional dollar value for particular natural resources. This figure could be called a Federal Presumptive Value (FPV) which would directly govern the disposition of claims. Second, it could result in issuance of federal regulations that would constitute a guideline for states or regional bodies for use in developing Natural Resources Damage Assessment Plans (NARDAP's). This approach would provide more flexibility in principle, but it must be recognized that a substantial amount of interstate or interregional diversity would be inevitable. A third approach would be limited to predetermined standard research protocols. Some combination of these three could also be considered.

A possible model for the development of a joint federal-state damage assessment scheme is the Coastal Zone Management Act of 1972.[43] Under this Act, a state may develop a coastal zone management program. An analogous damage assessment scheme would consist of a state-developed NARDAP prepared in conformity with federal criteria. Use of federal criteria would foster the development of uniform state approaches to damage assessment while allowing for special concerns of the state to be addressed. Moreover, damages assessed in accordance with a federally-approved NARDAP could be given prior-

42. Macbeth, *Measure of Damages in Fishkill Cases,* Envir. Cont. Newsletter (Nat'l Ass'n of Att'ys Gen.), Nov. 8, 1974, at 14.

43. 16 U.S.C. §§ 1451-1464 (1976).

ity in "superfund" disbursements. It is important to note, however, that with this approach, some states may choose not to prepare such a plan; moreover, even those that do choose to develop a plan may not prepare an adequate one.

On the other hand, under the Clean Air Act,[44] the federal agency which administers the Act, the Environmental Protection Agency (EPA), has the authority to promulgate a State Implementation Plan (SIP) or portions of a SIP where the state fails to develop an adequate one. Additionally, once a state implements its plan as a matter of state law, it may be submitted to EPA for approval as part of the SIP. Once approved, the SIP and any federally approved revision to the SIP exists as a matter of state and federal law.[45] Furthermore, the provisions of the Clean Air Act may generally be enforced by either the state or by EPA. Therefore, the Clean Air Act may better illustrate how a state/federal NARDAP may be developed and implemented.[46]

Whichever course is adopted, the resulting rule or standard could be made binding on administrative or judicial decision-makers in cases of natural resource assessment, subject to adjustment for such factors as the Consumer Price Index.[47] This would help persuade interested parties to focus their attention on the administrative proceedings. Those proceedings could be conducted before technically competent officials who would, with appropriate procedural safeguards, provide a more suitable forum for the resolution of generic natural resource damage assessment issues than would a trial court. In the event there was no applicable rule or standard that could apply to a given type of natural resource damage assessment problem, a claims-administration agency or court with jurisdiction could, under the doctrine of "primary jurisdiction," stay its hand until the matter had been referred to the proper

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44. 42 U.S.C.A. §§ 7401-7642 (West Spec. Pamph. 1978).

45. The State Implementation Plan system remains quite flexible allowing the governments to focus on specific problems on an ongoing basis, as evidenced by the recent requirement that non-attainment areas revise their plans to reflect relevant changes in air quality.

46. Such an approach is preferable to an approach legitimizing only voluntary state programs, as exemplified by the Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-1464 (1976).

47. *See* AM. FISHERIES SOC'Y, NORTH CENTRAL DIV., MONETARY VALUES OF FISH COMM., 1978 REIMBURSEMENT VALUES OF FISH 4 (1977), recommending that "[v]alues of fish should be increased in future by application of a multiplier such as the consumer price index . . . when evaluating losses either from a pollution caused fish kill or when negotiating compensation with competing water users."

administrative agency and a rule or standard developed in that context.

It is expected that such a proceeding would be challenged as a deprivation of the right to a judicial determination of damages or as a taking without just compensation or due process of law. However, such rules or standards would be subject to judicial review on limited grounds such as arbitrariness or lack of substantial evidence. Given the settled validity of measures such as the Federal Longshoremen and Harbor Worker's Compensation Act[48] or the workmen's compensation laws, which involve the use of schedules setting specific payments for particular injuries,[49] a program along the lines outlined may confidently be expected to pass constitutional muster if fair rulemaking procedures are used and an adequate record is established.

An Analogue for Damage Assessment Rulemaking: Workmen's Compensation

The establishment of presumptive values for the assessment of damage to natural resources is a concept that has not yet been implemented by the federal government. However, the federal government has been involved in establishing fixed dollar valuation schemes in other areas for many years. One federal program that bears a rough analogy to the concept of natural resource valuation is workmen's compensation. Although the workmen's compensation program is widely accepted today, initially it was confronted by numerous challenges in the courts. Many of the legal objections to the workmen's compensation scheme may also confront a presumptive valuation program for natural resources. It is important to note, however, that workmen's compensation has overwhelmingly withstood attack in the courts. Surely if injuries as elusive as pain and suffering or loss of consortium can be valued, or if rigid rules can be applied in the loss-of-limb situation, one must wonder whether our legal institutions can do a better job of setting a value on injuries to natural resources.

One of the major objections to values established under workmen's compensation laws was that actual damages were

48. 33 U.S.C. §§ 901-950 (1976). The schedule of disability compensation under the Longshoremen and Harbor Worker's Compensation Act appears at 33 U.S.C. § 908 (1976).

49. *See generally* 2 A. LARSON, WORKMEN'S COMPENSATION § 58 (desk ed. 1972).

not reflected and the individual's rights to a case-by-case determination of the value of his or her injury was not preserved. This argument was rejected in *New York Central Railroad v. White*,[50] where the Supreme Court recognized that it is often too expensive and time-consuming to litigate each incident or ascertain the facts necessary to make an accurate assessment of damages. Thus, a fixed schedule of representative damages arguably eliminates the possibility of determinations that are arbitrary, biased, or based on inadequate information. In short, workmen's compensation reached a middle ground by eliminating windfall recoveries at one end of the spectrum, and inadequate recoveries due to an improperly presented claim at the other.

A second major objection to the workmen's compensation scheme of established damage schedules relates to the constitutional guarantee of due process of law.[51] This objection manifests itself in two ways. First, it may be contended that limits of damage as set by a schedule are a denial of due process in that the right to present evidence is lost. Second, because workmen's compensation requires compulsory payment into a liability fund without regard to employer fault it could be characterized as a taking of property without due process of law.

The first due process argument can be overcome if the right to present evidence is afforded during the rulemaking proceeding. In rulemaking, an agency promulgates regulations pursuant to a statutory delegation of authority in accordance with the APA. Before rules can be promulgated, the APA generally requires that notice and opportunity to comment be given to the public and interested parties.[52] In some cases, a public hearing may be held; in all but a few emergency or other special cases, there must be a public comment period. The agency then evaluates the evidence presented and decides whether or not to adopt the rules. Unless the matter is committed by law to agency discretion, a term the Supreme Court has strictly construed,[53] this final decision by the agency is generally subject to judicial review by the courts.[54] In order to with-

50. 243 U.S. 188, 201 (1917).

51. U.S. CONST. amends. V, XIV.

52. 5 U.S.C. § 553 (1976).

53. *See, e.g.*, Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1970).

54. 5 U.S.C. § 702 (1976). The scope of judicial review of rulemaking is itself an evolving matter, and there is evidence of a withdrawal by the courts from the more intrusive forms of review that were once thought permissible. *See* Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council 435 U.S. 519 (1978),

stand judicial review, the agency's rulemaking action must not have been arbitrary, capricious, or an abuse of discretion and, where required, must be supported by substantial evidence.[55]

The fact that the presentation of evidence occurs before an administrative agency rather than a court does not amount to a denial of the right to present evidence. With all due respect, administrative agencies are often more capable of making value determinations and evaluating technical information than the courts or Congress. Given the difficulty of ascertaining actual damages, the evidence presented need not be precise to be useful in helping to establish a damage value. Congress, or an administrative agency through legislative delegation, may provide for the payment of damages to injured parties in amounts that reasonably approximate the probable damages.[56]

Under one scheme for valuation of natural resources that has been proposed in Congress,[57] there exists an additional opportunity to present evidence which does not exist under the workmen's compensation scheme. This opportunity would arise in the context of an administrative or judicial challenge to a specific damage claim associated with a spill event. The workmen's compensation values are conclusive and therefore evidence cannot be presented to counter the value set by the schedule; the natural resource values could be presumptively valid and thus could be challenged by either one or both of the parties. If challenged, evidence can be presented to show that the presumptive value is incorrect. Although the value established by rule is presumed to be correct until the party wishing to set it aside presents evidence to the contrary, the opportunity exists to present evidence to overcome the presumption.

The second argument, that property is being taken without due process of law, is likely to be countered by the economic contention that the party causing the damage may be in the best position to accommodate the costs associated with the activity. The problem with this response, however, is that pricing may not always be in the control of the entity responsible for the spill. The spiller may or may not be in a position to

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discussed in Stewart, *Vermont Yankee and the Evolution of Administrative Procedure: A Somewhat Different View*, 91 HARV. L. REV. 1833 (1978); 19 SANTA CLARA L. REV. 799 (1979). *But see* 1 K. DAVIS, ADMINISTRATIVE LAW TREATISE 605-16 (2d ed. 1978).

55. 5 U.S.C. § 706 (1976).

56. Crowell v. Benson, 285 U.S. 22 (1931).

57. S. 2083, 95th Cong., 1st Sess. § 5(e)(1)-(2) (1977) (as amended).

cover or pass along the costs associated with actual or prospective natural resource damage caused by the product.[58]

The Supreme Court addressed similar due process issues in the recent case of *Duke Power Co. v. Carolina Environmental Study Group,*[59] where the Price-Anderson Act's limitation of liability for nuclear accidents was held to be constitutional. The statute had been challenged as a violation of due process on the grounds that full recovery was not insured, that such a substitute for common law remedies was unjust, and that equal protection was being denied by the imposition of the burden of nuclear accidents upon those living near the source rather than on society as a whole. The Court rejected each of these arguments by emphasizing the rationality of Congress' choice of means to achieve its purpose. The general rationality of the Act's limitation of liability is based upon a balancing of the interests of the prospective victims of a major accident against society's need for new sources of energy. A Court which has so held is likely to sustain a statute permitting promulgation of a table of values for natural resources that might limit the recovery in the case of an oil or hazardous substance spill. However, it is important to note the difference between simply putting a ceiling on recovery and attaching a hard and fast price list to recoveries, serving as both a ceiling and a floor at the same time.

Federal presumptive values for natural resources could provide benefits to the injured party comparable to the benefits provided by workmen's compensation programs. The analogy exists, however imperfectly, even though in one case the injured party is an individual and in the other case the injured party may be a public body. Under such a scheme, compensation is provided where natural resource damage can be shown and the difficulty of proving actual valuation on a case-by-case basis is eliminated. This is especially important in instances where available funds may be exhausted before the full costs of the damage are known, much less paid.[60] The benefit to the party causing the damage is also analogous to workmen's compensation in that a ceiling is placed on the amount of recovery.

Compensation schemes are firmly established in the

58. Arizona Copper Co. v. Hammer, 250 U.S. 400 (1918); New York Central R.R. v. White, 243 U.S. 188, 201 (1917); Mountain Timber Co. v. Washington, 243 U.S. 219 (1916).

59. 438 U.S. 59 (1978).

60. *See id.* at 85-94.

framework of American law.[61] Establishing a fixed scheme to place a fixed value upon natural resources for the purpose of damage assessment would be one way to respond to the current need for such a program. This program would provide a methodology for conducting the actual damage assessment that could be utilized with a positive and definitive table of resource values.

Under the Clean Water Act of 1977, the Outer Continental Shelf Lands Act Amendments of 1978, and the proposed comprehensive oil spill liability act, the states and the federal government are charged with the responsibility of acting as trustees for natural resources. This new role demands resolution of the uncertainty associated with resource valuation. With appropriate procedural safeguards, a presumptively accurate valuation scheme could provide a viable mechanism for accomplishing this goal.

Key Legal and Policy Concerns

There are at least five pivotal legal and policy concerns that must be addressed in evaluating any program for the development of natural resources damage assessment along the lines that have been suggested in the proposed national scheme. These are: 1) the issue of preemption of state law; 2) the evidentiary status of the values or methodologies selected; 3) the procedural rights to be afforded interested parties in any rulemaking process; 4) the assignment of responsibility within the federal government for development and implementation of a rulemaking procedure; and 5) the scope and focus of the valuation effort. Some general observations may be offered on each of these areas.

Preemption. One of the most hotly-contested issues in recent environmental policy-making has been whether federal legislation should be drafted to preempt the states from taking action with respect to the subject matter of the particular legislation. The decided cases are perhaps somewhat difficult to reconcile, but in general, the Supreme Court will find that the states have not been preempted if there is an articulable basis upon which to sustain the finding.[62] The issue in any particular

61. 1 A. LARSON, WORKMEN'S COMPENSATION LAW § 2.50 (1978).

62. *See, e.g.*, Ray v. Atlantic Richfield Co., 435 U.S. 151 (1978); Askew v. American Waterways Operators, Inc., 411 U.S. 325 (1976). *See also* Chevron U.S.A., Inc. v. Hammond, 1978 A.M.C. 1697 (D. Alas. 1978) (appeal pending), noted in Kimball,

instance is likely to turn on the expressed intent of Congress or whether the state laws would frustrate the effectiveness of the federal law.

Preemption is, of course, a means of achieving nationwide uniformity. A strong case can be made for such uniformity in the case of resource damage assessment to the extent that industries with nationwide impacts and activities may be involved, and to the extent that particular ecosystems may not lend themselves to meaningful consideration according to the arbitrary limits of state boundaries. The states may nonetheless be expected to object to any attempt to preempt their own damage assessment policies and evidentiary rules. Even if formal preemption of state approaches to damage assessment does not occur, however, federal guidance on the subject could serve at least to encourage uniformity in much the same fashion as a model act does, to the extent that uniformity reduces the level of uncertainty of liability; it would seemingly render the potential liabilities more readily insurable.

Evidentiary Status of Rulemaking Results. Setting aside the question whether the results of a federal damage assessment rulemaking would be subject to a rebuttable presumption of accuracy, attention would have to be given to the use to which those results could be put. Clearly Congress could provide for the use of such rules in proceedings before federal agencies, but as one moves away from that type of forum, the questions loom larger. Even after *Crowell v. Benson,*[63] some might find it a violation of the separation of powers doctrine to make such rules binding in actions in the federal courts. Would it offend notions of our basic federalism to make such rules binding in actions in the state courts? Furthermore, steps should probably be taken to reflect such factors as improvements in our understanding of the biological and economic aspects of natural resource damage, and the effects of inflation. Presumably the door to the courthouse or the agency should be left open to permit interested parties to raise such matters. This is of particular importance in natural resource rulemaking

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Preemption of State Laws—Alaska Oil Discharge Prevention and Pollution Control Act Held Invalid, 10 J. MAR. L. & COM. 289 (1979).

63. 285 U.S. 22 (1932) (holding that no contravention of either the due process or judicial power clauses results from conferring adjudicative power on an administrative agency, such as a workmen's compensation board, to decide whether an employer is liable to his employee for injuries incurred in the employer's business as judicial review provides adequate protections).

given the dynamic nature of the data base upon which a rule might be predicated.

Procedural Rights. Some account must be taken of the need for the incorporation of changes in the data base underlying a damage assessment rule. The more fundamental question is what kinds of procedures should be followed in establishing such a rule in the first instance. This requires an assessment of the types of issues of law, fact, and policy that must go into any such rule, and the type of agency record that will be necessary in order to facilitate the measure of judicial review that is deemed to be appropriate. In light of *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council,*[64] unless Congress otherwise specifies, an agency need only provide those minimal notice-and-comment procedures prescribed in the APA.

Since any streamlining of the damage assessment process will entail new legislation, attention should be given to the possible need for spelling out further procedural guarantees. This is particularly so in light of the fact that the resulting rule would have a direct impact on the recovery of damages, which has traditionally been reserved for judicial determination. To the extent, however, that there was flexibility at the trial stage, for example, by ensuring that the presumption of the validity of the rule was only rebuttable, and preserving the right of parties to introduce evidence of their own on the question of valuation, this could be viewed as a justification for permitting less than full trial-type procedures during the rulemaking process. Where there are hotly contested matters raised in the rulemaking, with clashing expert opinions, some cross-examination may be necessary, or it may be sufficient simply to permit the parties to submit questions to the presiding officers. Because of the nature of the questions that are likely to arise in such a rulemaking, a multi-member hearing board could profitably be considered, modeled on the multi-disciplinary Atomic Safety and Licensing Boards used by the Nuclear Regulatory Commission.[65] Attention could also be given to the possibility of using an appeal board[66] for the purpose of

64. 435 U.S. 519 (1978); *see* 19 SANTA CLARA L. REV. 799 (1979).

65. *See* 42 U.S.C. § 2241 (1976). The Nuclear Regulatory Commission is apparently exploring the desirability of eliminating this intermediate step in its review of licensing cases. U.S. NUCLEAR REGULATORY COMM'N, RELEASE No. 78-240 (Nov. 3, 1978).

66. *See generally* Note, *Intermediate Appellate Review Boards for Administrative Agencies,* 81 HARV. L. REV. 1295 (1968).

fostering uniformity of decisions among the trial level boards, particularly if those trial boards were addressing damage assessment issued from a regional perspective.

Assignment of Agency Responsibility. Because of the present allocation of environmental responsibilities among a number of federal agencies, there is a considerable range of options available as to who in the federal government should be given the task of streamlining the damage assessment process. Candidate agencies include the EPA, National Oceanic and Atmospheric Administration (NOAA), Fish and Wildlife Service (FWS), the National Response Team (NRT), the Regional Fishery Management Councils, the Council on Environmental Quality, and the Water Resources Council.

Consider, for example, the possibility that the activity that President Carter has directed the Water Resources Council to undertake could be the occasion for a broader reform of decision-making methods and institutions in the damage assessment area. However, the Council's primary duties are the evaluation of the impacts of federal projects. The core biological issues here may be similar, but the economic and public policy issues in building a dam or some other expenditure of public funds may not necessarily be wise, fair, or legal where the disposition of private property is concerned. The Water Resources Council is, therefore, not the proper body to perform the function described above.

One alternative would be for the rulemaking to be implemented by the National Response Team (NRT), one of the government's chief sources of biological expertise. Such expertise will be necessary if the damage assessment baseline is to be moved forward. The NRT's concern is presently focused on the coordination of oil and hazardous substance cleanup operations and it is not currently involved in rulemaking activities of the sort described. It would be unfortunate if the NRT were burdened with essentially regulatory tasks. It might in this respect be better for an agency that already has rulemaking or related functions to provide the forum for a damage assessment and valuation rulemaking. This would allow the NRT, other interested and qualified agencies of the government, the states, and private parties to participate as full parties to the administrative proceedings.

The Regional Fishery Management Councils created under the Fishery Conservation and Management Act of 1976

(FCMA)[67] could be considered in this regard, either as parties or conceivably as the rulemaking agency, to reflect the regional dimension of marine natural resource damage assessment.

In enacting the FCMA, Congress found that the "fish off the coasts of the United States . . . constitute valuable and renewable natural resources. These fishery resources contribute to the food supply, economy, and health of the Nation. . . ."[68] Based on this and other findings,[69] Congress expanded the jurisdiction of the United States for fishery management purposes.[70] The FCMA asserts exclusive authority to manage all forms of marine animal and plant life, other than marine mammals, birds, and highly migratory species within a 200-mile Fishery Conservation Zone,[71] and beyond, where the Continental Shelf extends seaward of the 200-mile zone or where anadromous fishes of United States origin may be found.[72]

The FCMA establishes eight Regional Fishery Management Councils and charges them with the responsibility to develop fishery management plans designed to conserve and manage these fishery resources.[73] The Councils' tasks for conservation and management include, *inter alia,* the development measures taken to rebuild, restore, or maintain any fishery resource of the marine environment.[74]

The Fishery Management Councils established pursuant to the FCMA[75] are assigned the basic responsibility for preparation of a fishery management plan for each fishery within their jurisdictions.[76] These various plans must be prepared in a manner consistent with seven national standards.[77] Certainly, in order to properly carry out its management role, a council must know the nature of the resource that it seeks to manage. The expertise gained by the Council could readily be used for the development of baseline damage assessment data. Moreover, under the FCMA, the Councils have authority to "establish

67. 16 U.S.C. §§ 1801-1822 (1976).
68. *Id.* § 1801(a)(2).
69. *Id.* § 1801(a)(5), (6).
70. *Id.* § 1811.
71. *Id.* §§ 1801(b)(1), 1802(1),(3),(4).
72. *Id.*
73. *Id.* §§ 1852-1853.
74. *Id.* § 1802(2). *See* M. BEAN, THE EVOLUTION OF NATIONAL WILDLIFE LAW ch. 13 (1977).
75. 16 U.S.C. § 1852(a).
76. *Id.* § 1852(h)(1).
77. *Id.* § 1851(a).

such other advisory panels as are necessary or appropriate to assist it in carrying out its functions" under the Act.[78] Nonetheless, it must be acknowledged that there are limits to how much can be asked of the Councils at present. As Congressman Ruppe has stated, "[t]he available biological data on which to base fishery management plans is inadequate and the development of a sufficient data base will require an extensive research program."[79]

Pursuant to guidelines issued by the Secretary of Commerce,[80] the Councils are directed to consider various "habitat factors" in developing the fishery management plans.[81] It is specifically noted that comprehensive fishery management will have to address "the impact of pollution and the effects of wetland and estuarine degradation upon . . . fish. . . ."[82] Another requirement of the guidelines is that the fishery management plans "[d]escribe programs to protect or restore the habitat of the stock(s) from destruction or degradation. . . ."[83]

In expanding the scope of section 1321 of the Clean Water Act (CWA), Congress stated that it is "the policy of the United States that there should be no discharges of oil . . . which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976)."[84] This section of the CWA is clearly intended to protect from pollution by oil and hazardous substances the natural resources that had been previously claimed by the United States under the FCMA. It may well be that the FCMA can be utilized in conjunction with the CWA to provide the natural resource protection envisioned by Congress in enacting the CWA.

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78. 33 U.S.C. § 1852(g)(2).

79. 124 CONG. REC. H2629 (daily ed. April 10, 1978). The task of the Councils may be analogized to damage assessment rulemaking as to the degree of scientific certainty. Thus, 16 U.S.C. § 1851(a)(2) (1976) calls for reliance on the "best scientific information available," whereas the 1978 Senate bill discussed later in this article contemplated use of the "best information available." *See* S. REP. No. 95-1152, 95th Cong., 2d Sess. 27 (1978).

80. 50 C.F.R. pt. 602 (1978). This guidance is consistent with the primary thrust of the FCMA, which defines "conservation and management" as including all measures "required to rebuild, restore, or maintain . . . any fishery resource and the marine environment." 16 U.S.C. § 1802(a) (1976).

81. 50 C.F.R. §§ 602.2(d)(3), 602.3(b)(6) (1978).

82. *Id.* § 602.2(d)(3).

83. *Id.* § 602.3(b)(6)(iii).

84. 33 U.S.C. § 1321(b)(1) (1976).

Thus, the Fishery Management Councils are in a position to make an important contribution to the natural resource valuation process. The Councils should have both the expertise and the practical management experience to participate in this valuation exercise.[85]

The choice of implementing agency should be based on considerations of expertise and efficiency. Only an agency that already has a rulemaking function should have the key role in damage assessment rulemaking. Additionally, it is probably preferable that the authority be vested in a single agency, rather than a consortium. This will reduce procedural wrangling and would leave open the possibility that those other agencies could intervene in and offer their views on the record in the proceeding conducted by the "lead" agency. Multi-agency assignments, such as were envisioned in S. 2083, do not appear to be desirable in the rulemaking context.

Scope and Focus of the Damage Assessment Process. Any legislation addressed to reform of the resource damage assessment process should provide broad policy guidance but leave the details to an expert agency. Whichever agency is given the task of developing rules, it should be given a broad enough mandate to exercise its best judgment as to whether a national or regional focus is preferable. Congress, however, should provide a clear warrant as to the scope of the activity it intends to see pursued.

Thus, if Federal Presumptive Values (FPV's) are within Congress' expectation, this should be clearly stated. If, on the other hand, the legislative sense is that broader guidelines such as the National Resources Damage Assessment Plan (NARDAP) concept are more appropriate (*e.g.*, if it is also contemplated that state natural resource damage assessment decision-making would be influenced in the process), then suitable limiting language should appear either in the legislation or legislative history. Congress may also, on the basis of its own hearings, conclude that preference should be given to an ecosystem approach or a species-specific approach, as the case may be. The basis for the congressional choice should in any event be made clear in the legislative history.

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85. For an assessment of the effectiveness of the FCMA, see 7 NAT'L ADVISORY COMM'N ON OCEANS & ATMOSPHERE, REPORT TO THE PRESIDENT AND THE CONGRESS app. III (June, 1978).

FEDERAL LEGISLATIVE DEVELOPMENTS

The history of federal involvement in the area of marine environmental regulation provides a yardstick by which to assess the probable success of any proposed damage assessment mechanism. Federal involvement was quite limited until relatively recently. Congress was, on the whole, content to defer to the states in the area of environmental regulation. However, in 1969 the Stratton Commission Report[86] and in 1970 the National Estuarine Pollution Study[87] concluded that state action alone was not enough and that federal participation was needed. As a consequence, by the early 1970's, there was a rush of activity in Congress resulting in the creation of a new body of federal environmental law.[88]

The major federal law considered below as a natural resource damage control measure is the Clean Water Act of 1977 (CWA).[89] In addition Senate bill 2083, a recent version of the long-awaited "superfund" bill will be analyzed, as well as its potential effectiveness as a natural resource valuation and damage assessment mechanism.

The Clean Water Act of 1977

The Clean Water Act as an Oilspill Liability Scheme. The CWA is the primary federal law governing spills of oil and hazardous substances. In the Act, Congress declared it to be the national policy that:

> *[T]here shall be no discharge of oil* or hazardous substances *into or upon the waters* of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or *which may affect natural resources* belonging to, apper-

86. U.S. COMM'N ON MARINE SCIENCE, ENGINEERING AND RESOURCES, OUR NATION AND THE SEA 4, 56 (1969).

87. U.S. DEP'T OF THE INTERIOR, THE NATIONAL ESTUARINE POLLUTION STUDY, S. Doc. No. 58, 91st Cong., 2d Sess. 368-69 (1970).

88. Among the various regulatory measures that comprise the body of federal oil spill damage law are the Clean Water Act of 1977, 33 U.S.C.A. §§ 1251-1376 (West 1978); Trans-Alaska Pipeline Authorization Act, 43 U.S.C.A. §§ 1651-1655 (West Supp. 1978); Deepwater Port Act of 1974, 33 U.S.C. §§ 1501-1524 (1976); Outer Continental Shelf Lands Act, 43 U.S.C. §§ 1331-1341 (1976), *as amended by* Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, 92 Stat. 629.

89. Clean Water Act of 1977, 33 U.S.C.A. §§ 1251-1376 (West 1978). *See* Hall, *Clean Water Act of 1977*, 11 NAT. RESOURCE LAW. 343 (1978). *See generally* 3-4 SENATE COMM. ON ENVIRONMENT & PUB. WORKS, 95TH CONG., 2d SESS., LEGISLATIVE HISTORY OF THE CLEAN WATER ACT OF 1977 (1978).

> taining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976). [Emphasis added.][90]

Prior to the enactment of the 1977 amendments to the CWA, the seaward reach of section 1321 was limited to the contiguous zone, which reaches twelve nautical miles from the coast. With the 1977 amendments, however, the United States unilaterally extended its oil pollution control jurisdiction generally to 200 miles from the coast. Thus, the pollution control zone is at least as extensive as the Fishery Conservation Zone created by the FCMA.[91]

Under the CWA,[92] the President, acting through the EPA,[93] has the task of determining which discharges of oil or hazardous substances are "harmful," and for promulgating regulations to this effect. The EPA has defined harmful quantities of oil as those which

> (a) Violate applicable water quality standards, or
> (b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.[94]

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90. 33 U.S.C.A. § 1321(b)(1) (West 1978).

91. *Compare* Charney, *United States Interests in a Convention on the Law of the Sea: The Case for Continued Efforts*, 11 VAND. J. TRANSNAT'L L. 39, 46 & n.14 (1978) *with* Fidell, *Developments in the Law: The Fishery Conservation and Management Act of 1976*, in THE OCEAN CHALLENGE 214, 215 & nn.14-15 (Marine Tech. Soc'y & Inst. of Elec. & Electronic Eng'rs eds. 1978) (suggesting that CWA jurisdiction exceeds 200 miles) *and* Bernhardt, *The 1977 Clean Water Act Amendments—Conflicts and Contradictions*, 12 MARINE TECH. SOC'Y J. 28, 28 & n.5 (1978) (citing CWA § 311(b)(1)). The CWA was further amended in 1978. Act of Dec. 2, 1978, Pub. L. No. 95-576, 92 Stat. 2467.

92. 33 U.S.C.A. § 1321(b)(3)-(4) (West 1978).

93. Exec. Order No. 11,735, 38 Fed. Reg. 21,243 (1973), *reprinted in* 33 U.S.C.A. § 1321 app., at 183 (West 1978).

94. 40 C.F.R. § 110.3 (1978). A visible sheen is informally defined as 10-20 ppm of oil. NAT'L BUREAU OF STANDARDS, U.S. DEP'T OF COMMERCE, MARINE POLLUTION MONITORING (PETROLEUM) 36 (NBS Special Pub. No. 409) (1974). *See also* 43 Fed. Reg. 10,474-10,488 (1978), where in accordance with section 1321(b)(2)(A) of the CWA, the Administrator of EPA promulgated final rules that designated as hazardous substances a number of elements and compounds. When discharged, these materials are deemed to present an imminent and substantial danger to the public health or welfare. Examples of this danger include injury to fish, shellfish, wildlife, shorelines, and beaches. Not all discharges of oil are covered by the Act; there are two areas specifically exempted. The first area includes discharges "into the waters of the contiguous zone . . . where permitted under the International Convention for the Prevention of Pollution of the Sea by Oil, 1954." 33 U.S.C. § 1321(b)(3)(A) (1976). The second covers

The CWA establishes a liability scheme for oil and hazardous material discharges that violate the Act. The discharger is strictly liable for a limited amount for the actual cost of cleanup incurred by the United States.[95] It is important to note that the cost of removal includes any costs or expenses incurred by the federal or any state government in the *restoration or replacement of natural resources* damaged or destroyed as a result of the discharge.[96]

Section 1321 requires the President to prepare and publish a National Contingency Plan providing for the removal of spilled oil and hazardous material. The purpose of the plan is to "provide for efficient, coordinated, and effective action to minimize damage from oil and hazardous substances discharges."[97] The plan is to be implemented whenever a spill occurs unless the President determines that the party responsible for the discharge is capable of properly removing it. The President is directed to give the National Contingency Plan the force of law by issuing "regulations consistent with maritime safety and navigation laws."[98] The CWA also provides for civil penalties in the event that a party fails to comply with regulations promulgated thereunder.[99]

By executive order, the President delegated the responsibility for the National Contingency Plan to the Council on Environmental Quality.[100] The National Contingency Plan has been completed,[101] and a number of Regional Contingency Plans have been prepared to provide for its implementation. Significantly, under the National Plan, EPA is charged with the task of providing expertise in damage assessment resulting from a spill.[102] The relevant section, entitled "Federal re-

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discharges which are "permitted in quantities and at times and locations or under such circumstances or conditions as the President may, by regulation determine not be harmful." 33 U.S.C. § 1321(b)(3)(B) (1976).

95. 33 U.S.C.A. § 1321(b)(6) (West 1978). Vessel liability under § 1321 of the CWA has been held to be subject to the Limitation of Liability Act, 46 U.S.C. §§ 181-189 (1958). Complaint of Steuart Transportation Co., 435 F. Supp. 789, 805 (E.D. Va. 1977) *aff'd*, 12 E.R.C. 2035 (4th Cir. 1979).

96. 33 U.S.C. § 1321(f)(4) (1976).

97. 33 U.S.C.A. § 1321(c)(2) (West 1978).

98. *Id.* § 1321(j)(1) (West 1978).

99. *Id.* § 1321(j)(1)-(2) (West 1978).

100. Exec. Order No. 11735, 38 Fed. Reg. 21,243 (1973), *reprinted in* 33 U.S.C.A. § 1321 app., at 183 (West 1978).

101. 40 C.F.R. §§ 1510.1-.54 (1977). The National Plan is being revised to make it consistent with recent statutory changes.

102. *Id.* § 1510.22(1).

sponsibility," states in part that "[t]he Environmental Protection Agency, through the Office of Water and Hazardous Materials, provides expertise regarding environmental effects of pollution discharges and environmental pollution control techniques, including assessment of damages."[103]

In February, 1977, a subcommittee of the House Committee on Government Operations held hearings to review the National Contingency Plan.[104] At these hearings, it became apparent that the assessment of damages resulting from spills was a major weakness of the National Plan.[105]

One major cause of this shortcoming is funding, as neither the CWA nor the National Plan allows federal agencies to recover costs for damage assessments conducted as a result of spills.[106] At the 1977 hearing, Dr. Robert M. White, the former Administrator of NOAA, expressed his concern that pre-spill damage assessments should be prepared to reduce impacts from oil spills in areas crucial to the survival of fishery resources.[107]

Both the pre- and post-spill biological assessments are important from a legal viewpoint. As to the cost of such studies, one possible solution would be that the spiller bear a fair portion of the financial burden. It can always be argued that the spiller is responsible for the post-spill "information costs"[108]

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103. *Id.*

104. *Oilspill Contingency Plan: Hearings before a Subcomm. of the House Comm. on Gov't Operations,* 95th Cong., 1st Sess. 11 (statement of Dr. Robert M. White), 57 (letter from Rep. Leo J. Ryan to Elmer B. Staats, Compt. Gen.), 288 (EPA Office of Legislation reponse to questions from the House Gov't Operations Subcomm.) (1977) [hereinafter cited as *Oilspill Contingency Plan Hearings*].

105. *Id.*

106. The only federal law that provides funds for damage assessment purposes is the Outer Continental Shelf Lands Act Amendments of 1978; section 302(c)(2) makes the fund established under Title III of the Act available for this purpose. Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, § 302(c)(2), 92 Stat. 629 (to be codified at 43 U.S.C. § 1812).

107. *Oilspill Contingency Plan Hearings, supra* note 104, at 37 (statement of Dr. Robert M. White).

108. These "information costs" can be enormous. For an estimate of the long range study costs said to be associated with a single major spill, see P. Sorensen, Preliminary Report: Economic Evaluation of Environmental Damage Resulting from the Santa Barbara Oil Spill 5, 18-24 (July, 1974) (submitted to Cal. Dep't of Justice). The potential scope of the damage assessment process may be seen in a 1978 Senate report, which recites that "[r]esearch efforts should include, but not be limited to, development of ways to assess (1) long term damage to ecosystems, (2) chronic effects such as those affecting behavior, reproduction, or food supply that result in indirect losses, (3) predictive capabilities to determine potential losses through trophic interactions, and (4) information on minimizing the damage caused by spill control, dispersal,

which relate to the assessment of the damage caused by the spill if liability is shown. Suppose there is a spill but the research reveals no lasting adverse impacts. It is probably unfair to require the spiller to pay for research if it has asserted that no lasting effects will be felt. This approach may also present a legal problem to the extent that it involves the taxing of one party for an activity that is in reality of general benefit to the public.[109] Additionally, the taxation of research costs could be subject to abuse and come to be viewed as a means of funding projects for which there is little need.

The Natural Resource Damage Provisions of the Clean Water Act. Although there has been a long history of federal water pollution control legislation in the United States, the problem of natural resource damages was not directly addressed until enactment of the 1977 CWA. In particular, section 1321 of the CWA now embraces natural resource damage within the scope of oil and hazardous substance spill cleanup costs. Prior to the passage of the CWA, a spiller's liability was limited to the costs actually incurred by the federal government in removing the oil.[110] Such removal is defined by the CWA as the "removal of the oil . . . from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damages to the public health or welfare."[111]

One new subsection of the Clean Water Act could set the stage for a major new phase in the development of federal environmental law,[112] and for this reason it should be examined with care. This provision states that

[t]he costs of removal of oil or a hazardous substance for

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and cleanup operations." S. REP. No. 95-1152, 95th Cong., 2d Sess. 27 (1978). Any one of these elements of the information-gathering process could in many cases easily exceed the non-informational costs associated with remedying the effects of the pollution.

109. *See* Nat'l Cable Television Ass'n v. United States, 415 U.S. 336 (1974); Federal Power Comm'n v. New England Power Co., 415 U.S. 345 (1974) (concerning administrative agency licensing fees).

110. 33 U.S.C.A. § 1321(f)(1)-(2) (West 1978).

111. *Id.* § 1321(a)(8).

112. *Id.* § 1321(f)(4) (West 1978) builds on the Outer Continental Shelf Lands Act, 43 U.S.C. § 1334 (1976); 30 C.F.R. § 250.43 (1977); Trans-Alaska Pipeline Authorization Act, 43 U.S.C. § 1653 (1975); 43 C.F.R. § 29.1(d) (1978); and Deepwater Port Act of 1974, 33 U.S.C. § 1517 (1976). In particular, *see* § 1517(i)(3) of the Deepwater Port Act. Comparable restoration and replacement provisions were provided by the Outer Continental Shelf Lands Act Amendments of 1978, Pub. L. No. 95-372, § 303(b)(3), 92 Stat. 629.

> which the owner or operator of a vessel or onshore or offshore facility is liable . . . *shall include any costs or expenses incurred* by the Federal government *in the restoration or replacement of natural resources* damaged or destroyed as a result of a discharge of oil or a hazardous substance in violation of this section. [Emphasis added.][113]

Another new subsection mandates that the President or an authorized state representative "act on behalf of the public as trustee of the natural resources to recover for the costs of replacing or restoring such resources."[114] The legislative intent behind the adoption of these subsections is set out in the conference report. The report, in explaining the liability associated with these new provisions, stated that:

> *For those resources which can be restored or rehabilitated, the measure of liability is the reasonable costs actually incurred* by Federal or State authorities in replacing the resources or otherwise mitigating the damage. *Where the damaged or destroyed resource is irreplaceable* (as an endangered species or an entire fishery), *the measure of liability is the reasonable cost of acquiring resources to offset the loss.* [Emphasis added.][115]

Perhaps the most interesting language in this subsection arises from the congressional mandate that *"[s]ums recovered shall be used to restore, rehabilitate, or acquire the equivalent of such natural resources* by the appropriate agencies of the Federal government or the state government."[116] [Emphasis added.]

The procedural sequence triggered by this provision of the Act provides a key to making a natural resource damage provision work. However, it is unclear whether the trustee of the natural resources must first assess or expend monies to restore or replace the natural resource damage caused by the spill before the trustee may add these costs to the overall government claim for "costs of removal" assessed against the spiller.[117] The matter is further complicated by the fact that the cost associated with natural resource damage is not available

113. 33 U.S.C.A. § 1321(f)(4) (West 1978).

114. *Id.* § 1321(f)(5).

115. H.R. REP. No. 95-830, 95th Cong., 1st Sess. 92, reprinted in [1977] U.S. CODE CONG. & AD. NEWS 4424, 4467.

116. *Id.*

117. 33 U.S.C.A. § 1321(f)(4) (West 1978).

from the revolving fund established by the Act.[118] A potential result is that the environment can be restored only after the government claimant has prevailed in court and the spiller has paid the money damages awarded.[119]

These new provisions in the Clean Water Act must be evaluated in a broader context. There remains the basic question whether there is adequate information presently available to implement the restoration and replacement provisions of the Act. Moreover, natural resource damage by oil spill is only a part of a larger picture: hazardous or toxic substances could pose substantially more difficult natural resource damage questions.

Even if the first question of fixing liability is behind us, the problem of placing monetary value on the natural resources damaged by the spill must be addressed. An analysis of Senate bill 2083 is set forth below in order to illustrate how it might alter the existing body of federal natural resource law.

The 1978 Senate Superfund Bill

On August 25, 1978, Senate bill 2083, entitled the "Oil Pollution Liability and Compensation Act of 1978," was reported out of the Senate Committee on Environment and Public Works.[120] The bill built upon the framework of section 1321 of the CWA and must be viewed in conjunction with the CWA. The bill passed the Senate as H.R. 6803 but died in the House during the final days of the 95th Congress.[121] A similar "superfund" bill, Senate bill 684, is receiving congressional attention in the 96th Congress.[122]

Of importance is section 5 of S. 2083, regarding use of the oil spill liability fund. This section was added in the final committee markup sessions, and contained key language concern-

118. *Id.* § 1321(k).

119. *Id.* § 1321(f)(5). Maine has attempted to solve this sort of problem by imposing fees upon oil terminal operators to support funds used for cleanup and compensation purposes. ME. REV. STAT. ANN. tit. 38, § 541 (West 1978).

120. S. REP. No. 95-1152, 95th Cong., 2d Sess. 13 (1978).

121. In September, 1977, the Senate Committee on Commerce, Science, and Transportation reported and referred by unanimous consent the original S. 2083 to the Committee on Environment and Public Works. Thereafter Senator Muskie introduced S. 2900 as a proposed amendment to the original S. 2083. When the measure was reported out, the original language of S. 2083 was stricken and the bill was amended by the addition of S. 2900; thus, S. 2900 became S. 2083. Thereafter, the Senate incorporated S. 2083 into H.R. 6803 and sent it to the House.

122. S. 684, 96th Cong., 1st Sess., 125 CONG. REC. S2882 (daily ed. March 15, 1979).

ing natural resource valuation and damage assessment. Important to note here are the facts that 1) cleanup costs and damages would include the loss of natural resources, and 2) liability fund monies could be appropriated for spill-related research as well as other administrative costs. The following analysis reviews this proposed legislation solely as a national resource valuation and damage assessment measure; the liability and other aspects of the bill are beyond the scope of the present inquiry and will not be discussed.

A stated purpose of the bill was to "preserve the public trust in the Nation's natural resources."[123] Thus, S. 2083 would have established a strict liability scheme without regard to the fault of the spiller for damage to natural resources.[124] Under the proposed scheme, the federal and state governments were designated trustees of the natural resources within their respective jurisdictions and could recover for damages to the natural resources so held in trust. Although such a recovery would be stated in terms of dollars, S. 2083 did not limit legal damage to the costs associated with restoration or replacement of damaged resources.

Under the 1978 Senate bill, the President would have been charged with administration of the liability fund, the establishment of a claims procedure, and the payment of monies from the fund.[125] A specific provision of the bill authorized the President to delegate his responsibilities to the appropriate administrative agencies. In its report, the committee specifically set out two principles to guide the delegation of his powers. The two principles are:

> (1) to the extent practicable fragmentation in the administration of this act is to be avoided; and
> (2) where appropriate, consistent with the avoidance of

123. S. REP. No. 95-1152, 95th Cong., 2d Sess. 13 (1978).

124. This approach has been adopted by several states. *See, e.g.*, Green v. General Petroleum Corp., 205 Cal. 238, 270 P.2d 952 (1928) (drilling mishaps on land); Lansco, Inc. v. Department of Environmental Protection, 138 N.J. Super. 275, 350 A.2d 520 (1975); Florida Pollution Spill Prevention and Control Act, FLA. STAT. ANN. § 376.011 (West 1974); Oil Discharge Prevention and Pollution Control Act, ME. REV. STAT. ANN. tit. 38, § 541 (West 1978); Water Pollution Control Act, WASH. REV. CODE ch. 90.48 (Supp. 1977). *See* Bergman, *supra*, note 4, at 1 (1973). *See also* Union Oil Co. v. Oppen, 501 F.2d 558, 563 n.3 (9th Cir. 1974) (reserving the question of strict liability).

125. The committee report indicated that the claims procedure should be developed in accordance with the relevant provisions of H.R. 6803 entitled "Domestic Oil Pollution Liability, Compensation and Fund." S. REP. No. 95-1152, 95th Cong., 2d Sess. 16 (1978).

> fragmentation; the experience and pattern of responsibility developed in the National Contingency Plan under section . . . (1321) of the Clean Water Act should be used.[126]

This guidance is consistent with the rulemaking approach discussed above.

The fund established by S. 2083 would have been available to pay the removal costs of the federal or state government, as well as any other party performing authorized removal functions under the National Contingency Plan. More importantly, the fund would also have been available to pay the costs of research, and the costs of establishing and maintaining such damage assessment capability in accordance with the government's responsibility under that plan. Further, money would be available from the fund to pay the costs of assessing damage to natural resources. Finally, the fund would pay the costs of the federal and state governments in restoring or replacing natural resources damaged or destroyed as a result of a spill.

Senate bill 2083's major innovation regarding damage assessment was found in section 5(e). Under this provision, a number of tasks would be shared by the federal agencies that presently have management and protection responsibility over natural resources. The named agencies are EPA, the Fish and Wildlife Service (FWS), and the National Oceanic and Atmospheric Administration (NOAA). These three agencies would be given responsibility for standardizing a process for assessing the damages to aquatic resources caused by spills of oil or hazardous materials. The committee envisioned this task as being carried out through rulemaking after a comprehensive review of alternative damage assessments schemes. Moreover, the committee stated that the review of alternative schemes would "focus scientific debate concerning damage assessment on the rulemaking process and result in a decision regarding the best simplified procedures for making accurate and defensible assessments of (natural resources) damages in spills."[127]

The procedures contemplated under section 5(e) for natural resources damage assessment were intended to provide a mechanism for fixing a dollar value to resource damages with a minimum of administrative cost. The committee report refers to this aspect of damage assessment as a "balancing ap-

126. *Id.* at 15.
127. *Id.* at 25.

proach."[128] How the drafters expected this approach to be carried out is unclear. It appears that the size of the spill would trigger the type of assessment that is conducted. Thus, a spill would be characterized as "minor" if it was less than 10,000 gallons of oil or where it did not cause significant natural resource damage. This may well result in the assignment of dollar values to specific representative bio-systems on a valuation-per-specific-volume basis.[129]

Though confusing, in general the valuation scheme envisioned by the Senate Environmental and Public Works Committee in 1978 would permit a range of valuation approaches. At one end of the spectrum is a more simple form of damage assessment that would be designed to minimize the need for field work associated with a spill event. The assessment techniques employed in this instance would be a combination of generalized habitat values, species values, and other associated methods.

At the other end of the spectrum are the assessment procedures that come into play when a spill is not minor and the natural resource damage is substantial. In the case of major damage, the need for prompt field work is evident and the cost of carrying out the assessment increased proportionally. The rulemaking carried out under section 5(e) would serve to establish a range of assessment procedures and protocols that could be employed depending on the size of the spill.

Under the 1978 Senate bill, the rulemaking process would be a joint effort of the three federal agencies noted above in cooperation with the affected state governments. The committee expressed the desire that hearings concerning the rulemaking under section 5(e) be as flexible as possible and conducted on a regional rather than state-by-state basis.[130] The advantages of such a regional approach are obvious and become a necessity in light of the short two-year period provided in the bill for the issuance of initial regulations.[131] It is also apparent that there is a need to provide an adequate forum so that free and open scientific dialogue could be developed to support the rulemaking.

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128. *Id.* at 15.

129. *Id.* at 25.

130. *Id.*

131. For illustrations of the problems associated with such short statutory timetables, see E.I. duPont de Nemours Co. v. Train, 430 U.S. 112 (1977); Natural Resources Defense Council v. Train, 510 F.2d 692 (D.C. Cir. 1975).

As noted, S. 2083 would have required that the initial rulemaking be completed within two years with a comprehensive review and update every two years thereafter. When the appropriate damage assessment protocols are followed, the natural resource damage assessment valuation would be given the evidentiary status of a rebuttable presumption. Thus, the spiller would have to shoulder the burden of proof in contesting the dollar amount of the government's damage assessment case.

Senate bill 2083 specified that the damage assessment regulatory package should consist of two major programs. The first would be "*standard procedures for* simplified assessments requiring minimal field observation, including *establishing* measures of *damages based on units of discharge of units of affected area.*"[132] The committee report indicates that this aspect of the rulemaking framework is to be applied to "minor" spills of oil and hazardous materials which would include oil spills under 10,000 gallons. The committee report goes on to state that

> *Natural resource damage assessments* based on this type of regulation *should* require as little field work as possible, and *rely on a combination of habitat values, tables of values for individual species, and previously conducted surveys and laboratory studies* related to units of discharge or units of affected area. [Emphasis added.][133]

The second major aspect of the rulemaking scheme provides that the program is to specify "alternative protocols for conducting assessments in individual cases to determine the type and extent of short and long term injury, destruction, or loss (of natural resources)."[134] The regulations developed under this subpart would be utilized in large or unusually damaging spills for site specific damage assessment activities. As stated in the committee report, the primary focus of this program is twofold: first, to contain protocols for field assessments of short and long-term damage, and second, to develop methodologies for determining the value of the damaged resources.[135]

The committee report is quite specific as to the type of information the proposed rulemaking would provide. For ex-

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132. S. 2083, § 5(e)(1)(B)(i), 95th Cong., 1st Sess. (1977) (as amended) (emphasis added).

133. S. REP. No. 95-1152, 95th Cong., 2d Sess. 26 (1978).

134. S. 2083, § 5(e)(1)(B)(ii), 95th Cong., 1st Sess. (1977) (as amended).

135. S. REP. No. 95-1152, 95th Cong., 2d Sess. 26 (1978).

ample, the following areas of concern were to be addressed by the rulemaking:

1. Protocols for field assessments:
   A. Uniform instructions for cost-effective site investigation;
   B. Sampling and statistical procedure;
   C. Methodology for determining the geographical extent of damage.

2. Application of the Protocols to:
   A. Coastal estuaries;
   B. Open water;
   C. Freshwater rivers;
   C. Lakes; and
   D. Wetlands.[136]

The report also suggested that the classification system of the national wetlands inventory be used to the extent practicable in developing these protocols.

Regulations promulgated under this provision could establish procedures for assessing the value of both the direct loss of organisms and their habitat and the indirect loss of organisms and habitat. Whether both types of injury should be included is an open and difficult issue, as inclusion of indirect effects could serve to remove any meaningful ceiling. Public debate on this issue is essential.

Under the scheme proposed by the Senate in 1978, three major federal environmental agencies — EPA, NOAA, and FWS — would be given substantial new responsibility. These agencies would share the jobs of conducting resource damage assessment and of providing expert testimony when damage claims were brought by the United States. The damage assessment function would have been divided in the following manner: EPA would be responsible for freshwater and estuarine resources landward of the baseline of the territorial sea; NOAA would be responsible for marine resources; and FWS would be responsible for living resources and their supporting ecosystems. These arrangements would, to be sure, have to be altered if and when the administration presents a reorganization plan for either environmental or oceans programs.

As a national program, S. 2083 placed primary responsibility at the federal level but allowed federal resources to supple-

136. *Id.*

ment state initiatives. Upon the request of a state governor where the state is a "public trustee" plaintiff, NOAA, EPA, or FWS would be available to conduct assessments and bring natural resource damage claims on behalf of the state. Consistent with the federal guidelines, a state could as a trustee assert claims itself under S. 2083. However, the state would have to carry out its assessment effort in accordance with regulations to be promulgated under section 5(e).[137] This approach would be in harmony with the NARDAP concept discussed above.

CONCLUSION

A key period in the evolution of natural resource damage assessment policy is currently taking place. The decision in *The Zoe Colocotroni,* together with Senate passage of a bill that would have established a comprehensive federal rulemaking procedure for damage assessment valuation decisions, squarely poses the policy questions that are identified in this article. The choice, it would seem, is one of steering in the wake of *The Zoe Colocotroni* or continuing along the course suggested by S. 2083. Either approach has shortcomings. It is questionable whether it is proper, in the broadest sense, for generic environmental issues such as the valuation question to be decided in the framework of an isolated civil action where an evidentiary default by one party may have wide-ranging implications for others. On the other hand, the damage assessment provision of the Senate bill proceeded to the verge of enactment without congressional hearings of any kind *on that provision,* much less debate on the floor.

This article has sought to demonstrate the seriousness of the legal and scientific issues that inhere in the policy decision that will shortly be made. Whatever view may be taken of the merits of the available choices, action should not be taken without a full exploration of the issues in plenary congressional hearings. It is therefore appropriate that all participants in the legislative process, and all those whose training give them an interest, make their views known. It is the authors' intent that this article serve as a springboard for further analysis of the pressing issues of public policy now before the courts and Congress.

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137. The National Contingency Plan could be an appropriate vehicle for presenting damage assessment and natural resource valuation information. The National Plan and each Regional Plan could readily accommodate an appendix for Damage Assessment Protocols and another for natural resource valuation guidance.